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This listing of claims will replace the prior version of claims in the application:

Listing of Claims:

1-48. (Cancelled).

49. (currently amended) A silicon on insulator structure, the structure comprising:

a single crystal silicon device layer comprising a central axis, a circumferential edge, a radius extending from the central axis to the circumferential edge and a first axially symmetric region which is vacancy dominated and substantially free of agglomerated vacancy-type defects, wherein the first axially symmetric region comprises the central axis of the device layer and has a width, as measured in the radial direction from the central axis towards the circumferential edge, which is at least about 7.5% of the radius of the device layer;

a single crystal silicon handle wafer; and,

an insulating oxide layer between the device layer and the handle wafer;

~~The structure of claim 47~~ wherein the handle wafer further comprises two major, generally parallel surfaces, one of which is the front surface and the other of which is the back surface of the silicon wafer, a central plane between the front and back surfaces, the circumferential edge joining the front and back surfaces, a surface layer which comprises a first region of the silicon wafer between the front surface and a distance, D_1 , of at least about 10 micrometers, as measured from the front surface and toward the central plane, and a bulk layer which comprises a second region of the silicon wafer between the central plane and the first region, the silicon wafer having a non-uniform concentration of vacancies with the concentration of vacancies in the bulk layer being greater than the concentration of vacancies in the surface layer such that,

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upon subjecting the wafer to an oxygen precipitation heat treatment, a denuded zone is formed in the surface layer and oxygen clusters or precipitates are formed in the bulk layer with the concentration of the oxygen clusters or precipitates in the bulk layer being primarily dependant upon the concentration of vacancies.

50. (currently amended) A silicon on insulator structure, the structure comprising:

a single crystal silicon device layer comprising a central axis, a circumferential edge, a radius extending from the central axis to the circumferential edge and a first axially symmetric region which is vacancy dominated and substantially free of agglomerated vacancy-type defects, wherein the first axially symmetric region comprises the central axis of the device layer and has a width, as measured in the radial direction from the central axis towards the circumferential edge, which is at least about 7.5% of the radius of the device layer;

a single crystal silicon handle wafer; and,

an insulating oxide layer between the device layer and the handle wafer;

~~The structure of claim 47~~ wherein the handle wafer further comprises two major, generally parallel surfaces, one of which is the front surface and the other of which is the back surface of the silicon wafer, a central plane between the front and back surfaces, the circumferential edge joining the front and back surfaces, and a denuded zone which comprises the region of the silicon wafer from the front surface to a distance, D_1 , of at least about 10 micrometers, as measured in the direction of the central plane, and which contains interstitial oxygen, the silicon wafer having a concentration of interstitial oxygen in the denuded zone at a distance equal to about one-half of D_1 is at least about 75% of the maximum concentration of interstitial oxygen in the denuded zone.

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51. (currently amended) A silicon on insulator structure, the structure comprising:

a single crystal silicon device layer comprising a central axis, a circumferential edge, a radius extending from the central axis to the circumferential edge and a first axially symmetric region which is vacancy dominated and substantially free of agglomerated vacancy-type defects, wherein the first axially symmetric region comprises the central axis of the device layer and has a width, as measured in the radial direction from the central axis towards the circumferential edge, which is at least about 7.5% of the radius of the device layer;

a single crystal silicon handle wafer; and

an insulating oxide layer between the device layer and the handle wafer;

~~The structure of claim 47~~ wherein the handle wafer further comprises two major, generally parallel surfaces, one of which is the front surface and the other of which is the back surface of the silicon wafer, a central plane between the front and back surfaces, the circumferential edge joining the front and back surfaces, a front surface layer consisting of a first region of the silicon wafer within a distance, D_2 , of no more than about 15 micrometers from the front surface and a bulk layer comprising a second region of the silicon wafer between the central plane and the front surface layer, the bulk layer having a substantially uniform oxygen concentration and a concentration of crystal lattice vacancies such that upon subjecting the silicon wafer to an oxygen precipitation heat treatment consisting essentially of annealing the silicon wafer at 800 °C for four hours and then at 1000 °C for sixteen hours, the silicon wafer will contain oxygen precipitates having a concentration profile in which the peak density of the precipitates in the bulk layer is at or near the central plane with the concentration of the precipitates in the bulk layer generally decreasing in the direction of the front surface layer.

52. (cancelled)